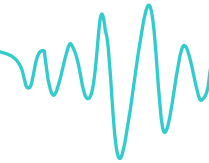


# Behrens and Associates, Inc.

*Environmental Noise Control*



August 28, 2019

PDC Energy  
1775 Sherman St. #3000  
Denver, CO 80202

Attention: Zack Liesenfeld

Subject: Ambient Sound Level Report

Re: Ridgeway 3N66W1 1-6

Dear Mr. Liesenfeld:

Per your request, an ambient sound level survey was performed for the proposed Ridgeway 3N66W1 1-6 pad site in Platteville, Colorado from Friday, August 23 to Monday, August 26, 2019 to measure and document the ambient sound levels near the site. The following report documents our findings.

## **Ambient Sound Level Survey**

An ambient survey, including A-weighted dB(A) and C-weighted dB(C) sound pressure level data, was performed for the proposed Ridgeway 3N66W1 1-6 pad site to measure and document ambient sound levels for hourly, 15-minute and daytime/nighttime averages. Per the Colorado Oil and Gas Conservation Commission (COGCC), data collected where winds over five (5) miles per hour are present, are inadmissible. The daytime and nighttime sound level averages in Table 1 omit the data collected where the wind speed exceeded 5 miles per hour. Attachments 4 through 9 include all the unfiltered data.

## **Sound Measurement Instrumentation**

The instrumentation used for the monitoring locations were Svantek Model 971 integrating and logging sound level meters, which were calibrated prior to deployment. The metering systems were approximately 4 feet above ground level per COGCC guidelines and in a locked box for security. Attachment 1 shows an aerial view of the monitoring locations while Attachments 2 & 3 show the location of the deployed monitors. The measured noise levels are presented graphically in Attachments 4 through 7 and in tabulated form in Attachments 8 & 9.

The ambient noise levels were used to determine the typical daytime (7am to 7pm) and nighttime (7pm to 7am) averages at the monitored location. The daytime and nighttime logarithmic averages were calculated using the 15-Minute noise levels measured at the location. The calculated ambient average daytime and nighttime noise levels are summarized in Table 1.

Corporate Office: Hawthorne, California

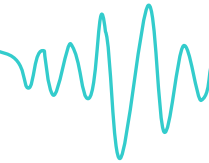
Carson, California ~ Aledo, Texas ~ Napa, California ~ Longmont, Colorado ~ McDonald, Pennsylvania ~ Calgary, Canada

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**Table 1 Average Daytime and Nighttime Ambient Noise Levels**

PDC Energy - Ridgeway 3N66W1 1-6								
Day	Location 1				Location 2			
	Daytime Leq Ambient Noise Levels		Nighttime Leq Ambient Noise Levels		Daytime Leq Ambient Noise Levels		Nighttime Leq Ambient Noise Levels	
	dBA	dBC	dBA	dBC	dBA	dBC	dBA	dBC
1 *	53.7	77.8	50.4	74.4	55.0	80.3	50.4	76.8
2	50.4	72.6	51.9	71.3	47.8	69.8	48.3	71.1
3	49.8	72.6	54.6	73.4	47.7	70.0	48.9	69.8
4**	53.3	76.8			51.5	73.8		
Overall Leq	52.1	75.6	52.7	73.2	51.6	75.8	49.3	73.7

\*Day 1 Daytime is an Leq (logarithmic average) from 3pm until 7pm.

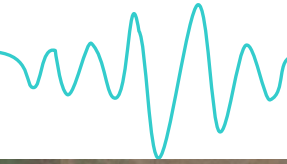
\*Day 4 Daytime is an Leq (logarithmic average) from 7am until 3pm.

Best regards,

Colin M. Drolshagen  
Lead Acoustical Technician

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**Attachment 1**  
**Ambient Noise Monitoring Aerial View**



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**Attachment 2**  
**Ambient Noise Monitoring Location 1 (40.26091°/ -104.73461°)**



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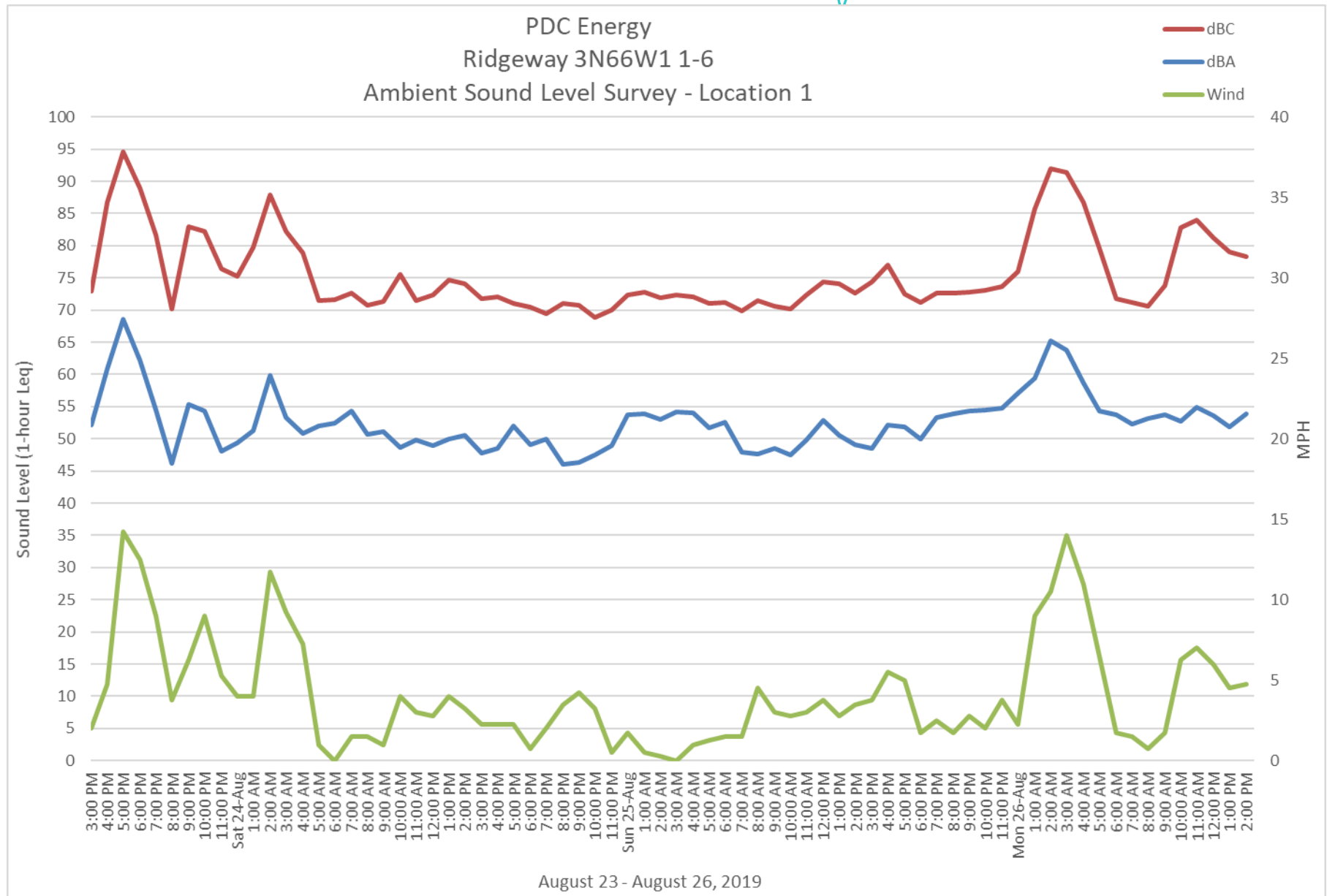
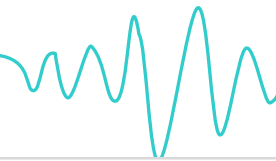
Environmental Noise Control



**Attachment 3**  
**Ambient Noise Monitoring Location 2 (40.26118°/ -104.72878°)**

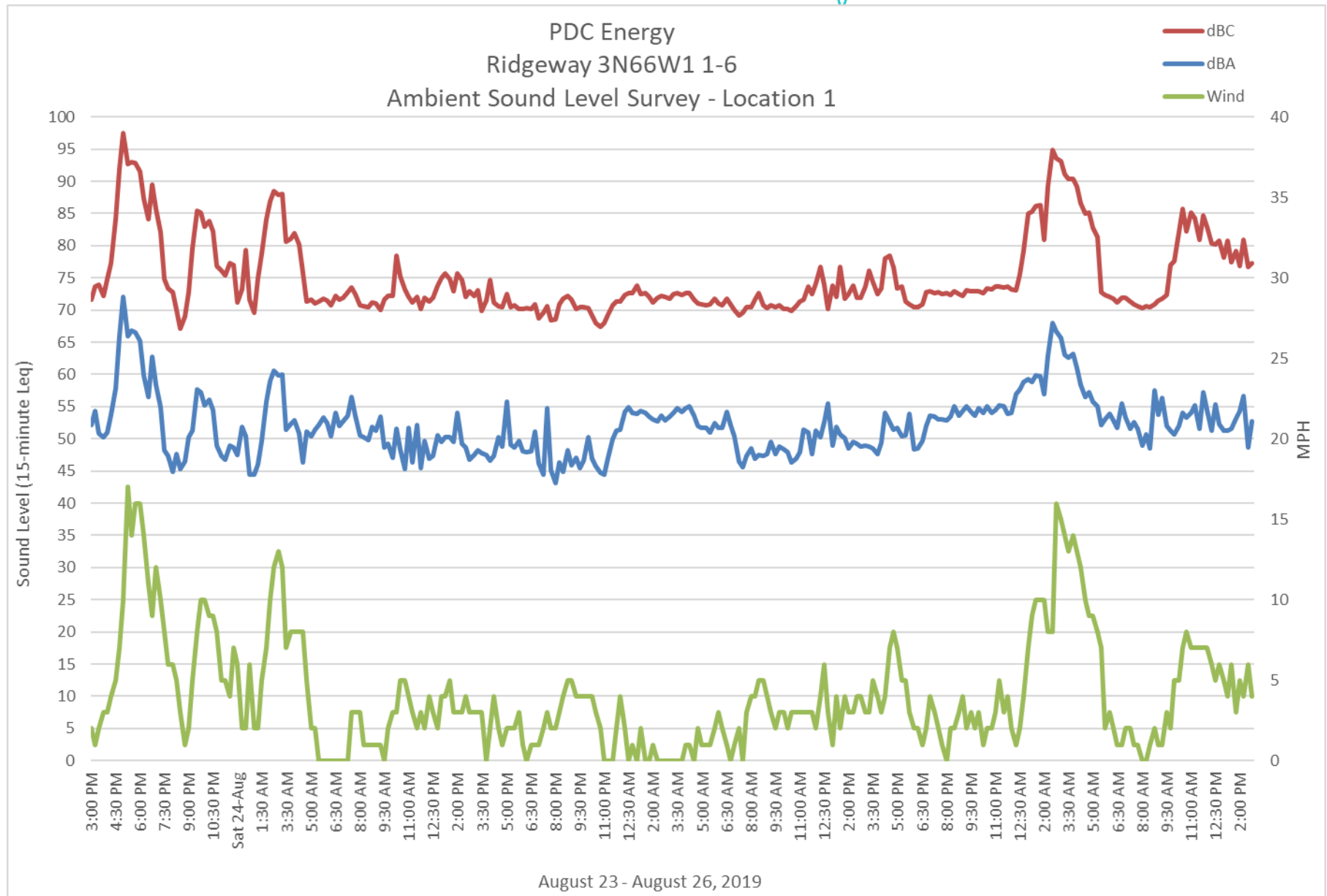
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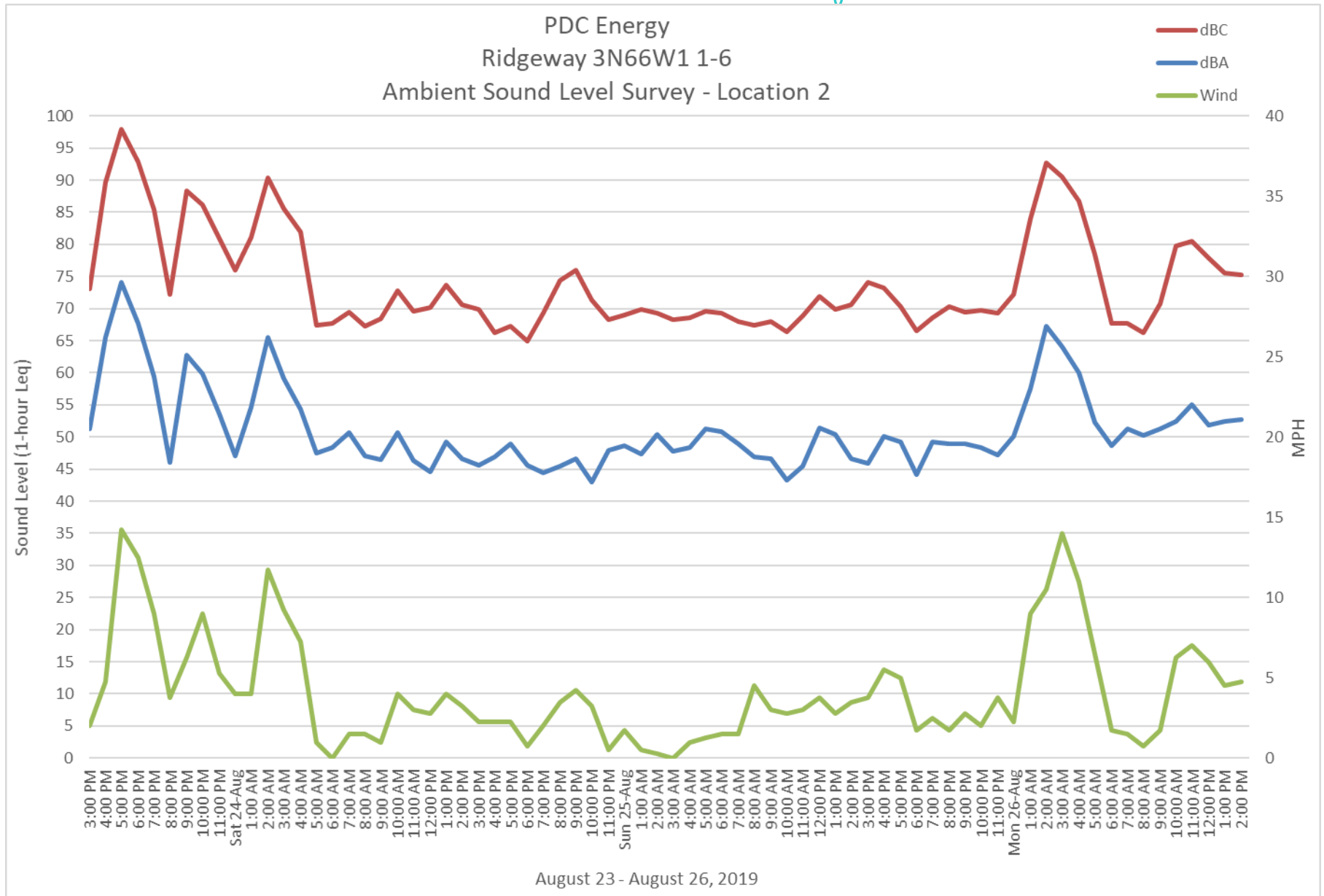
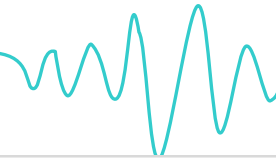
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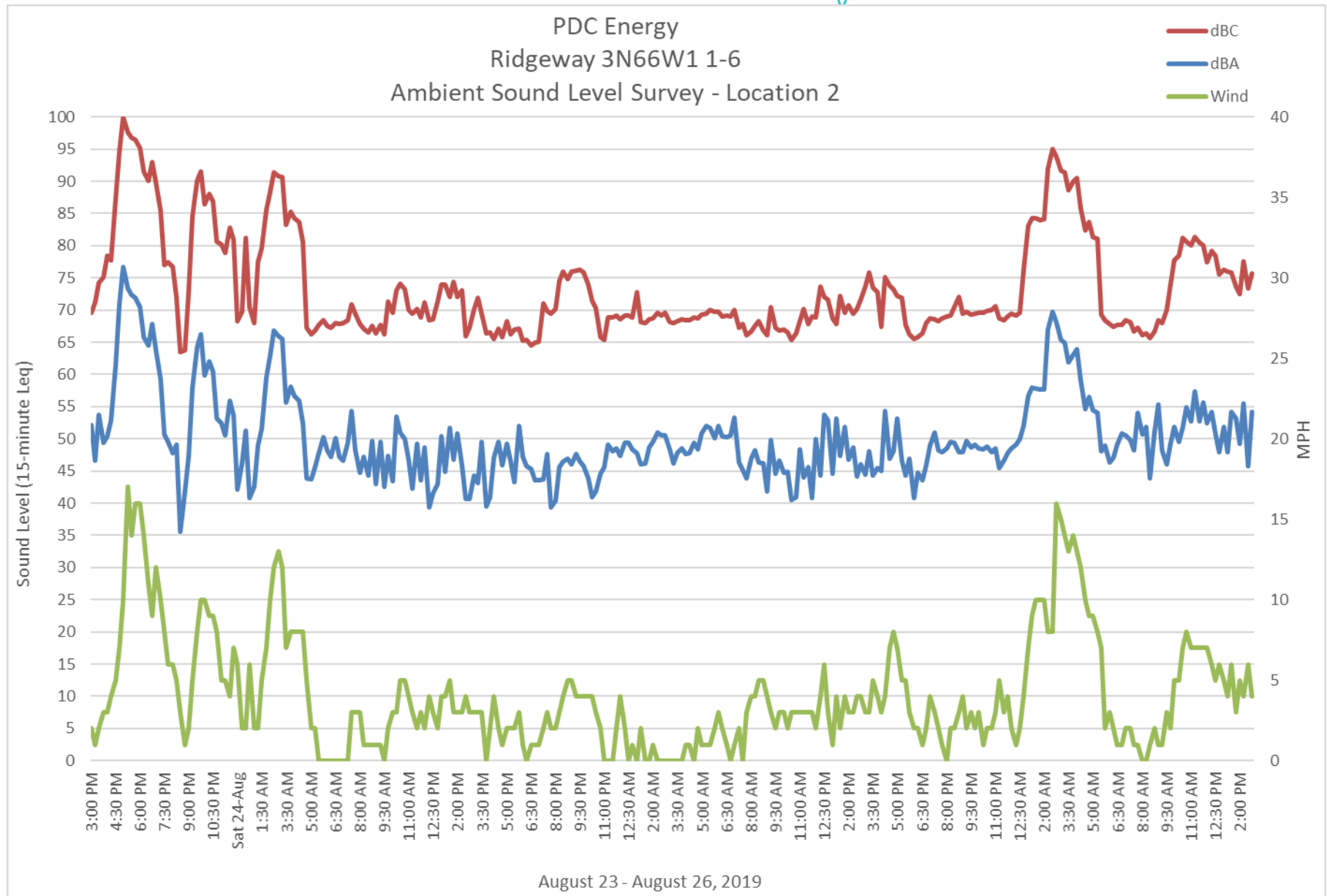


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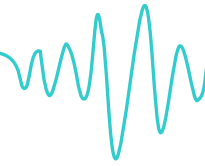






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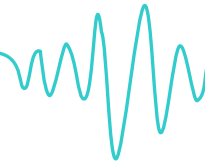
Environmental Noise Control



PDC Energy - Ridgeway 3N66W1 1-6					
Location 1 - Hourly Leq					
Time	dBA	dBC	Time	dBA	dBC
3:00 PM	52.2	73.0	3:00 AM	54.2	72.3
4:00 PM	60.9	86.8	4:00 AM	54.0	72.1
5:00 PM	68.6	94.6	5:00 AM	51.7	71.1
6:00 PM	62.2	89.0	6:00 AM	52.5	71.1
7:00 PM	54.5	81.7	7:00 AM	47.9	69.8
8:00 PM	46.2	70.2	8:00 AM	47.6	71.5
9:00 PM	55.3	82.9	9:00 AM	48.5	70.5
10:00 PM	54.4	82.2	10:00 AM	47.5	70.2
11:00 PM	48.0	76.5	11:00 AM	49.8	72.4
Sat 24-Aug	49.4	75.2	12:00 PM	52.9	74.3
1:00 AM	51.3	79.7	1:00 PM	50.5	74.1
2:00 AM	59.9	87.9	2:00 PM	49.0	72.6
3:00 AM	53.3	82.2	3:00 PM	48.5	74.4
4:00 AM	50.8	79.0	4:00 PM	52.2	77.0
5:00 AM	52.0	71.5	5:00 PM	51.9	72.5
6:00 AM	52.4	71.6	6:00 PM	49.9	71.2
7:00 AM	54.4	72.7	7:00 PM	53.3	72.7
8:00 AM	50.7	70.8	8:00 PM	53.8	72.6
9:00 AM	51.1	71.3	9:00 PM	54.4	72.8
10:00 AM	48.7	75.5	10:00 PM	54.5	73.0
11:00 AM	49.9	71.5	11:00 PM	54.7	73.6
12:00 PM	48.9	72.3	Mon 26-Aug	57.2	76.0
1:00 PM	49.9	74.7	1:00 AM	59.5	85.7
2:00 PM	50.6	74.0	2:00 AM	65.3	92.0
3:00 PM	47.8	71.8	3:00 AM	63.8	91.4
4:00 PM	48.5	72.1	4:00 AM	58.7	86.8
5:00 PM	52.0	71.1	5:00 AM	54.3	79.6
6:00 PM	49.1	70.4	6:00 AM	53.7	71.8
7:00 PM	50.0	69.4	7:00 AM	52.4	71.2
8:00 PM	46.1	71.0	8:00 AM	53.2	70.6
9:00 PM	46.3	70.7	9:00 AM	53.8	73.8
10:00 PM	47.5	68.9	10:00 AM	52.7	82.8
11:00 PM	48.9	70.0	11:00 AM	55.0	84.0
Sun 25-Aug	53.8	72.3	12:00 PM	53.7	81.2
1:00 AM	54.0	72.8	1:00 PM	51.9	79.1
2:00 AM	53.1	71.9	2:00 PM	54.0	78.4

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PDC Energy - Ridgeway 3N66W1 1-6					
Location 2 - Hourly Leq					
Time	dBA	dBC	Time	dBA	dBC
3:00 PM	51.3	73.1	3:00 AM	47.8	68.2
4:00 PM	65.5	89.6	4:00 AM	48.3	68.6
5:00 PM	74.1	97.9	5:00 AM	51.2	69.7
6:00 PM	67.8	92.9	6:00 AM	50.9	69.2
7:00 PM	59.4	85.4	7:00 AM	49.0	68.0
8:00 PM	46.0	72.3	8:00 AM	47.0	67.4
9:00 PM	62.7	88.4	9:00 AM	46.7	68.0
10:00 PM	59.9	86.2	10:00 AM	43.2	66.3
11:00 PM	53.6	81.0	11:00 AM	45.5	68.9
Sat 24-Aug	47.0	76.0	12:00 PM	51.5	71.9
1:00 AM	54.6	81.1	1:00 PM	50.5	69.9
2:00 AM	65.5	90.4	2:00 PM	46.7	70.6
3:00 AM	59.1	85.6	3:00 PM	45.9	74.1
4:00 AM	54.3	81.9	4:00 PM	50.2	73.2
5:00 AM	47.5	67.4	5:00 PM	49.2	70.3
6:00 AM	48.3	67.7	6:00 PM	44.1	66.5
7:00 AM	50.7	69.4	7:00 PM	49.2	68.6
8:00 AM	47.0	67.3	8:00 PM	48.9	70.4
9:00 AM	46.6	68.5	9:00 PM	48.9	69.5
10:00 AM	50.7	72.8	10:00 PM	48.4	69.8
11:00 AM	46.3	69.6	11:00 PM	47.3	69.3
12:00 PM	44.7	70.1	Mon 26-Aug	50.2	72.2
1:00 PM	49.3	73.7	1:00 AM	57.6	84.0
2:00 PM	46.6	70.6	2:00 AM	67.3	92.7
3:00 PM	45.6	69.9	3:00 AM	64.0	90.6
4:00 PM	46.9	66.3	4:00 AM	60.0	86.8
5:00 PM	48.9	67.2	5:00 AM	52.3	78.5
6:00 PM	45.7	65.0	6:00 AM	48.7	67.7
7:00 PM	44.5	69.4	7:00 AM	51.2	67.7
8:00 PM	45.5	74.3	8:00 AM	50.2	66.2
9:00 PM	46.6	76.1	9:00 AM	51.2	70.8
10:00 PM	43.1	71.3	10:00 AM	52.5	79.8
11:00 PM	48.0	68.3	11:00 AM	55.1	80.5
Sun 25-Aug	48.7	69.0	12:00 PM	51.9	77.8
1:00 AM	47.3	69.9	1:00 PM	52.4	75.6
2:00 AM	50.4	69.3	2:00 PM	52.7	75.3